



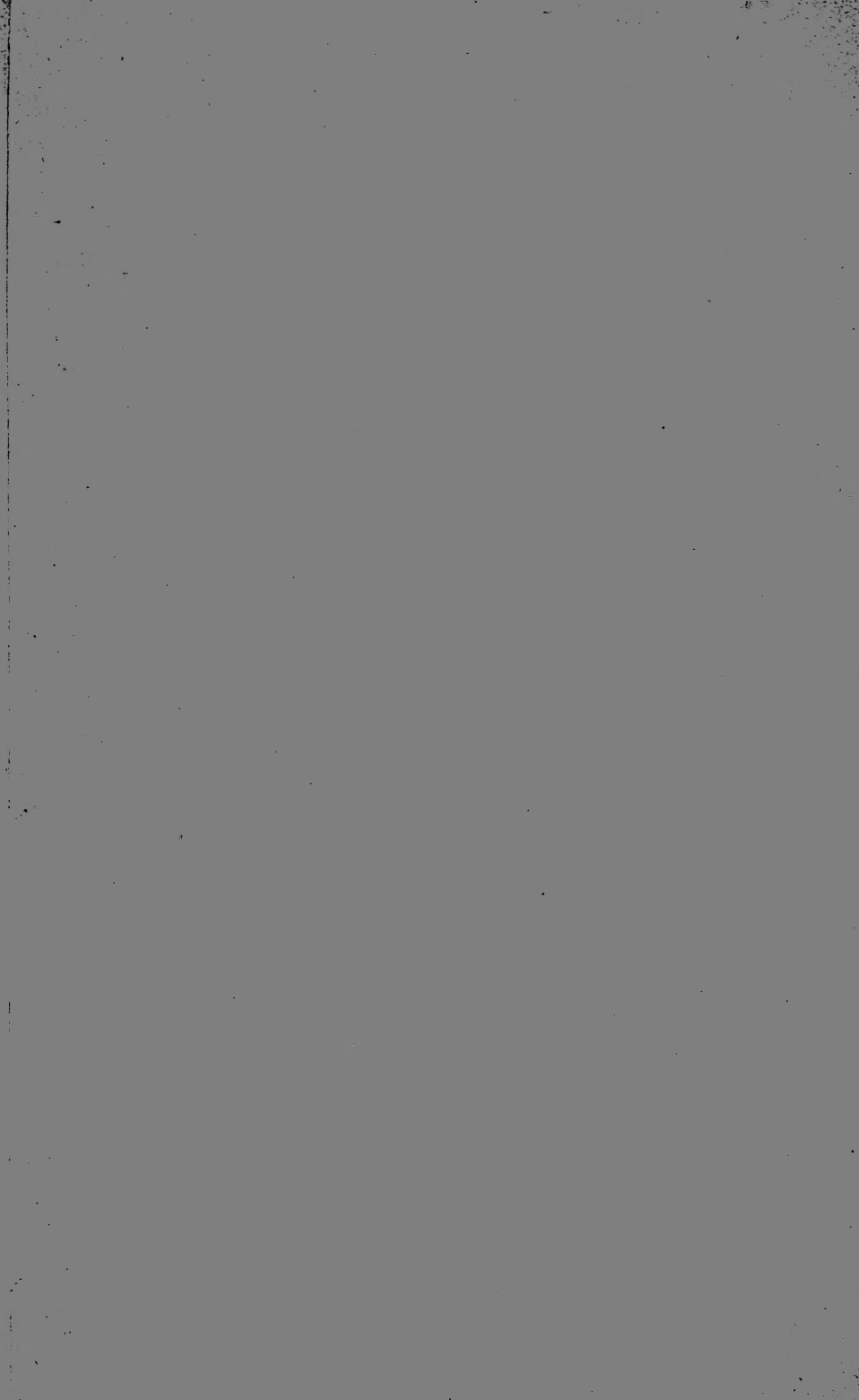


Nov. 6 1879

Newport Natural History  
Society

From J. M. R. Southwick

NEWPORT  
NATURAL HISTORY  
SOCIETY







State of Rhode Island and Providence Plantations.

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# ANNUAL REPORT

OF THE

## COMMISSIONERS OF INLAND FISHERIES,

MADE TO THE

## GENERAL ASSEMBLY,

AT ITS

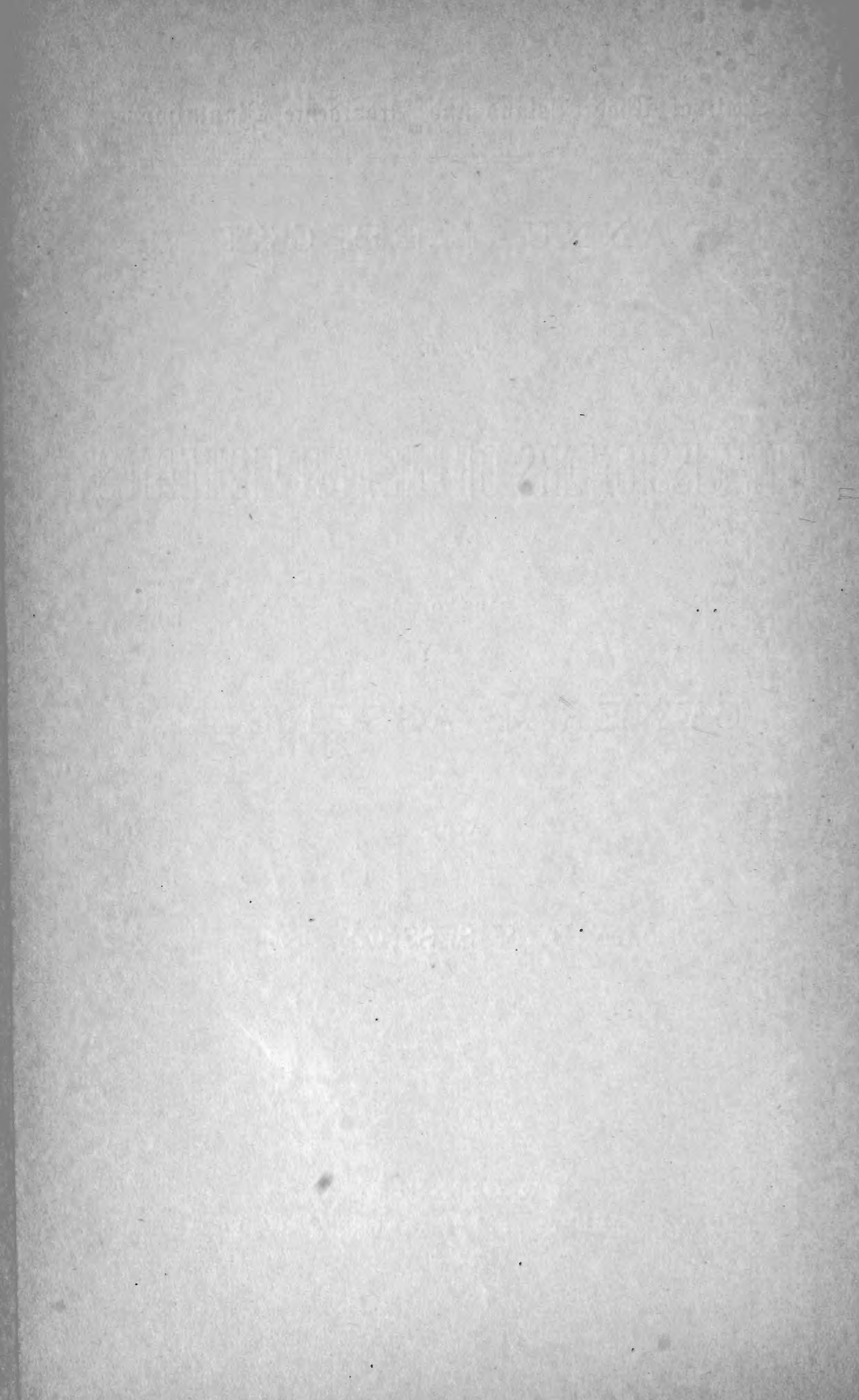
## JANUARY SESSION, 1893.

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PROVIDENCE:

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1893.





## REPORT.

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*To the Honorable the General Assembly of the State of Rhode Island and Providence Plantations, at its January Session, 1893:*

The Commissioners of Inland Fisheries herewith present their annual report for the year 1892.

### SHAD.

No shad fry were had this year from the United States Fish Commissioner. The catch in the waters of our state has not been large this year.

### TROUT.

Forty thousand (40,000) trout eggs were purchased this year. The fry from these were sent to various parts of the state to persons who applied for them, and deposited in the streams.

Trout fishing has been the poorest the past season of any yet known by the Commissioners, the past two seasons having been very dry and the brooks and streams low. It has been reported to us by reliable persons that trout have been found dead in the pools on the streams where they were left by the falling waters.

We are still of the belief that quicker results are obtained by putting in yearlings than by the method formerly pursued by us of depositing the fry.

### TAUTOG

are reported more plenty than ever before known.

It is estimated that twenty tons, 40,000 pounds, were taken with

hook and line at Stone Bridge this fall notwithstanding there were nineteen anchored traps set at Seaconnet during the spring fishing, and thirty-three stake traps, within 8 miles of the Stone Bridge during the summer and fall.

Mr. Isaac Cook alone caught 1500 pounds.

We have the statement of Capt. Hunt, that there were 35,000 pounds in cars and smacks in Newport Harbor at one time. The spring fishing in the upper waters of the Bay for tautog and other bottom fish was poor.

#### BLUE FISH

have been very abundant on the coast, but we think no unusual numbers in the Bay.

#### SCUP

as will be seen by the tables of shipments have been very abundant, the catch in the traps far ahead of any former year.

#### BUTTER FISH

are becoming very plenty in our waters and we hear of very large schools of them outside the Bay.

#### MACKEREL

have been about in considerable quantities, mostly of the small size, but not a large number taken.

They are said to destroy very much of the spawn of lobsters.

#### STRIPED BASS

have been scarce this season. It is to be hoped that this much valued fish will again become more plenty.

We are indebted to Capt. N. B. Church for the following statement regarding our fisheries. What gives much value to Capt. Church's statements is the fact that he is a close observer, a practical fisherman, and a candid writer. He says:

"The fyke fishery for flat-fish was not a success, the catch being limited and prices were low.

"The catch of herring was also small.

"The catch of scup was the greatest known at Seaconnet.

"Sea Bass were not plenty.

"The river traps did not catch many scup in that vicinity, although they were fairly plenty for the hook and line fishermen all summer.

"Squeteague were very plenty during their season from the middle of June to the middle of July.

"Blue fish were scarce in Rhode Island waters most of the time this season, although they have been abundant on the coast.

"A very light catch of codfish both spring and fall.

"The catch of mackerel was light although there were plenty on the coast."

The following table shows the amount of fish and lobsters shipped by the Old Colony Steamboat and Railroad from Newport for the year ending Dec. 31st, 1892:

Month.	Fish.	Lobsters.
January.....	8 Barrels	41 Barrels.
February.....	16 "	32 "
March.....	62 "	14 "
April.....	286 "	127 "
May.....	17,149 "	276 "
June. ....	6,571 "	253 "
July.....	1,347 "	659 "
August.....	216 "	459 "
September.....	339 "	243 "
October...	621 "	4 "
November.....	167 "	1 "
December. ....	50 "	14 "
Total. ....	26,832 "	2,123 "

From Tiverton Station were shipped as follows:

	Fish.	Lobsters.	Clams.
January .....	Barrels	Barrels	17 Barrels.
February .....	"	"	12 "
March .....	"	1 "	30 "
April .....	49 "	"	6 "
May .....	357 "	20 "	1 "
June.....	404 "	23 "	4 "
July.....	417 "	44 "	23 "
August.....	206 "	43 "	2 "
September. . . . .	129 "	"	9 "
October.. . . . .	186 "	"	"
November . . . . .	54 "	"	"
December.. . . . .	"	"	"
<hr/>			
Total.....	1802 "	131 "	104 "

Besides these unusually large shipments, there were shipped by vessels to

New York.....	about	5,000 Barrels.
Providence .....	"	5,000 "
Fall River.....	"	3,000 "
<hr/>		
Total.....	"	13,000 "

Making a total of 41,634 barrels for this season's shipment of fish from Newport county alone.

It is also estimated that 1,500 barrels of fish were lost from the traps by storms.

The following is the amount of fish and lobsters shipped by the Old Colony line for the last ten years from Newport :

1882.....	12,514 Barrels.
1883. ....	13,874 "
1884.....	20,301 "
1885.....	18,421 "
1886. ....	18,439 "
1887.....	17,491 "
1888.....	16,194 "
1889.....	21,353 "

1890. ....	11,583 Barrels.
1891.....	20,236 “
1892. ....	28,955 “
<hr/>	
Total .....	199,461 “

The following table shows the catch of menhaden for the last seven years :

1886.....	232,471 Barrels.
1887.....	175,667 “
1888.. ..	377,607 “
1889. ....	508,482 “
1890.. ..	560,086 “
1891.. ..	225,000 “
1892.....	51,703 “

#### THE MENHADEN FISHERY.

The present season has been worse than the last, which was exceptionally a poor season for these fish.

These two past years have proved a serious set back to this important fishery of our state.

The menhaden fishery may be said to have commenced with the invention of the purse net about 45 years ago and has developed into an important industry. In the statistics furnished by the United States Commission we find as follows :

“Rhode Island is now more interested in this branch than any other New England state and the industry ranks among the most prominent enterprises of the state. The capital invested in 1889 was \$452,925. 573 persons were employed and 177,133,333 fish were handled, for which \$265,700 was paid. The manufactured product consisting of different grades of oil and various kinds of fertilizers were worth \$427,757, an increase of \$217,208 over 1887 and \$93,070 over 1888.”

The failure of this fishery the past two years was in part to be attributed to the restrictive legislation of other states.

The menhaden are a wandering ocean fish, and according to the best authority we have, spawn upon the ocean, wander along the coast, from Newfoundland to Florida, sometimes appearing at one place, sometimes at another in large numbers.

To pursue them successfully it becomes necessary to follow them wherever they are to be found.

The antagonism existing in some localities between the practical fishermen, and he who fishes for sport or recreation is unwise, and we believe it often leads to great injustice. We believe in fostering both interests.

The one is an industrial interest that produces much that is necessary to life and affords the means of livelihood to those engaged in it.

The other, a healthy change and relaxation to the merchant, the student, or the professional man seeking relief from over application to their several duties, or anyone else who chooses to avail of it and we believe it right for the State to provide for and preserve this privilege by all fair means, and within reasonable limits, with the same care it would a public park, and very much to the same end.

#### HIBERNATION.

A boat sunk between Fort Adams and the Torpedo Station about twenty months ago, was raised February 12th and found to contain quite a colony of fish and some small lobsters. The boat had a large quantity of mud in her that had settled so firmly together that it quite stopped the hole made in her, and also the holes in the well, so that both the boat and her well were bailed free of water and the boat floated to the shore at the city dock. The owner thinks that there were half a bushel of cunners and tautog found in her, all in the mud, and we are told that some of them were so embedded in the mud as to leave an imprint of their form.

THE FLUCTUATIONS IN THE NUMBER OF FISH; AND THE NATURAL  
CAUSES OF THEIR DEPLETION.

The fluctuations from year to year and for indefinite periods have been noted all along throughout the whole history of them.

Often a great diminution without known cause has occurred, and also immense numbers appear without any known reason; such has ever been the case with fishes.

These fluctuations were as clearly observed in the middle ages as now, the increase and diminution then caused the rise and fall of towns; their settlement and opulence, as well as their decay and poverty have been due to the increase or diminution of the fishes. In later times the changes have been no less obvious and important.

The influences that produce these changes upon our coast is of especial interest to us.

Unquestionably the great factor in producing the change in numbers is amongst the fishes, the larger or best armed destroying the smaller or weaker.

But those most reduced with us, are those that cast their spawn in the fresh upper water of our streams. Some of these have been so long absent, or their numbers so reduced that we hardly realize that they once existed in great abundance in our waters. Of these the most important are the salmon, shad, herring and bass. While the influence of natural causes is sufficient to produce this change, the generally accepted theory is that the depletion is caused by the obstruction to streams, pollution of the water, and such as arise from the development of the country. We incline to the belief that this is the primary cause of the depletion of the anadromous fishes.

The appearance in ever varying numbers of the fishes that visit our coast every season, affords room for much study, and no end of speculative theory.

Their history while absent is one of the unrevealed mysteries

of nature ; they are governed by natural laws, that baffle all efforts at investigation.

Still it is a subject of great interest to the student of natural history, and to the political economist.

The fluctuation in their number is phenomneal, often coming in abundance when few are expected, and few when large numbers are looked for, for instance the appearance of scup in our waters in 1872. Prof. Baird said in 1877 : " I was quite satisfied in my own mind that unless something of this kind was done, very serious results would happen. Very much to my disgust I must admit, the next year, even with all the abundance of these engines, the young scup came in quantities so great as to exceed anything the oldest fisherman remembered. Since then scup has been very much more abundant than it was when I wrote my book and report."

Another instance occurred in the menhaden fishery of 1889 (referred to in our report for that year) few being expected but overwhelming numbers appeared, exceeding that of anything known in former years. So it must ever be until we know more of them. Change is the immutable law of their existence.

SOME OF THE DESTRUCTIVE AGENCIES THAT ARE ALWAYS AT WORK TO  
DECIMATE THEIR NUMBERS.

First of these is the enormous destruction of the spawn by other fish and by storms.

The terrible havoc made by other fish upon the young, and the merciless destruction that continues through all their fish life, by other fish, birds, and animals, and to this may be added their own cannibal propensity that does not stop to discriminate between their own relatives and others ; and to these causes may be added diseases, heat, or cold, parasites, convulsions of nature, and the numberless vicissitudes of fish life, known or unknown, observed or not observed by investigators. Sometimes whole colonies are destroyed by unknown causes, as was the case with the tile fish



that were discovered by Prof. Baird in such large numbers, and seemed to be annihilated at one stroke.

Having considered the natural causes that affect all fish, and referred to some of the indirect influences of man upon the fresh water spawning fish, we will now enquire into the direct act of man, the capture of ocean fish in large quantities as is now possible by the use of improved methods.

What is the effect upon the fisheries?

Who can answer?

We had thought to leave this question, but inasmuch as our State has especial interest in the solution of this question, as our largest fishing interest is directly and vitally affected by its determination; we feel that we should not be doing our whole duty by evading it, lest we might, like too many others, "step in where angels dare not tread."

We will first see what others have to say about it. The English Commission under Prof. Huxley examined a vast number of witnesses, received answers to nearly 62,000 questions and visited nearly all the fishing localities of Great Britain and Ireland, many of which had been fished over for many centuries, and though in addition to our modes of fishing by weirs, nets and seines, the beam trawl is there used, which is far more destructive to fish and their spawn and young than any mode of fishing by us, that Commission came to the unanimous conclusion that there was no danger to the sea fisheries either in the open sea, or in bays and arms of the sea from over fishing. The points indicated are the following: "That no amount or kind of fishing can diminish the schooling or wandering fishes of the high sea, such as the herring, mackerel and menhaden."

The same conclusions were arrived at in regard to the great herring fishery of the North Sea, in fact, while the investigation was being made (if we remember right) an immense quantity of their spawn became detached from the bottom by a storm, and were driven upon the shore, where it was fed to hogs or carted off

for manure, showing that natural causes were at work that were quite sufficient to produce, and did produce great changes, compared to which the catch by man was not to be considered.

The late Prof. Baird estimates the daily destruction of other fish upon our coast at 10,000,000,000 or 2,500,000,000 pounds by blue fish alone and says that their food consists of menhaden, mackerel, herring, scup, and other species.

Does this slaughter go on all the year?

He also gives us an estimate of the number of menhaden devoured on the coast of New England at three thousand million million, 3,000,000,000,000,000, in the summer months.

Does this continue when they are absent from our coast?

He further says "that this calculation might be pursued to any extent but I have presented enough to show that the question of human agencies in the way of affecting or influencing the great ocean fisheries is scarcely worth considering."

Who is there that knows more about this subject?

Whom shall we consult?

If no better is offered we shall still quote from him: "If it were in any way our duty to take measures for the prevention of the destruction of life in the sea, and of maintaining the yield of fish generally at its largest figure, we could accomplish it in no better way than by increasing the extent and magnitude of certain of our fisheries.

"Thus I have shown that there may be a saving of herring by the capture of the cod and ling on the British coast. For every bluefish captured in the waters of the United States many hundreds of other fish are left to enjoy their life, perhaps however, in their turn to be the means of an increased destructiveness in another series of animals.

"The capture of whales gives a respite to the schools of mackerel and menhaden, while the destruction of the herring and menhaden relieves though in an infinitesimal degree, the drain upon the crustaceans and the smaller fish."

We repeat the question. What is the effect of the taking of fish in quantities now possible by human methods?

We have in the foregoing presented the conclusions of three different commissions composed of eminent scientists, who made as thorough investigations as it were possible, and all agree in their conclusions.

We were sure from past experience, there are hundreds ready to "step in" and say there can be no question about it. But we will ask them to pause while we consider the question further, and ask them the questions that we think have an important bearing upon the question before us. The depletion of fish in our waters are chiefly salmon, shad, herring and bass, and as these are all fresh water spawners and some of them left our waters long before the adoption of modern appliances, and none of them have been taken in large quantities by them. This fact may have some significance as to these fish; but we are not now considering them at all.

We propose to apply all we have to say here to the ocean fishes, those taken by methods considered most destructive with us.

These are the scup, menhaden, and the bluefish, two of these we know to have been rare in our waters, the scup in 1794 and the bluefish in 1822.

What caused the depletion of the scup in the last century? Or the bluefish in the early part of this century?

In 1870 it was thought that scup were being exterminated since which there has been an uninterrupted fishing for them by improved and continually increased numbers of traps and the catch of the last year far exceeds any former year. How is this possible were they being decimated?

How were it possible to take such exceeding large numbers of menhaden in 1889 and 1890 if their numbers had been so decimated by previous years fishing?

Will some one wise in such matters tell us where these fish are when absent from our waters?

How old they get to be ?

Are they subject to vicissitudes when absent ?

What nature ?

What becomes of all the old fish ?

With such immense numbers the natural mortality must be very large. Why do we not see some trace of them ?

Do predaceous fish live on others when absent from us ?

Do menhaden live on the spawn of other fish ?

Do mackerel devour the spawn of lobsters ?

Do menhaden ?

If so, what effect does it have upon the stock in the waters ?

Do small fish or crustaceans affect the number of large ones by destroying their spawn ?

If bluefish destroy menhaden, mackerel, herring and scup, may not these fish compensate by devouring the spawn or young of the bluefish, and in that way retaliate upon their enemies ?

If anyone can answer these questions, then would we vote wise enough to have a hand in the government of the fishes.

God alone rules the universe and to his infinite wisdom we must leave this, until we have learned at least something more than we yet know, then it will be quite time to try to assist Him in the government of the fishes of the sea.

We think that there will be found here some difficulty in governing the fisheries suggested ; just which to foster, and protect, and which to destroy in order to preserve the most desirable and have a favorable result.

Who is there wise enough to know how to do this ?

Who is there that can say that any plan to govern is more than an experiment and if apparent success comes he is by no means sure it is through any means he has applied ?

#### HIGH PRICES DO NOT INDICATE SCARCITY OF FISH.

Prof. Baird in report for 1886, page 23 :

“ One supposed evidence of our increasing scarcity of fish is the

increase in price at such stations. This is, however, a fallacious argument, as the market is regulated by the rates obtainable in the centers of supply rather than elsewhere, and the local prices necessarily must correspond."

This does not entirely account for the advance in prices over former years, when there was no such thing as a fish market and the fisherman sold direct to the consumer from his boat landing, or from a wheelbarrow at the street corner.

Now all is changed; the fisherman ships direct to the wholesale dealer, or to the retailer, who have large markets and heavy rents, quantities of ice, and help to clean, and teams to deliver, besides long book accounts, and losses. The retailer fixes his prices and makes his margin to cover all these contingencies, and most of the fluctuations of the wholesale market, and maintains a quiet, uniform price not much affected by the degree of plenty or scarcity of fish.

The second convention of the Fish Commissioners of the New England states occurred in Boston, November 16th, 1892. These meetings offered the means of interchange of views of representatives of the different states that cannot fail to be of profit to all.

The subjects discussed chiefly, were relating to the protection of fish and game.

A proposition was favored limiting the size that a lobster could be taken to  $10\frac{1}{2}$  inches. We believe that a uniform rule is generally desired by the fishermen and to some extent it may help the fisheries.

But we feel sure that in order to be effective it should include those states that furnish a market for the great bulk of the product.

The lobster business has grown to be of much importance, they furnish a delicious and healthy food, and the taking of them is the means of livelihood of a large class.

Experiments are being made to propagate them, and it is with deep interest we watch for favorable development in this line.

We trust that some day we may do something in the way of increasing their numbers in the waters of this state.

The Fish Commissioner of Newfoundland has under his direction hatched and planted in 1892, 426,285,000 lobsters.

NOTE—For the above we are indebted to Dr. H. R. Storer, who has manifested much interest in this subject, and received the above item from his correspondent. He also assures us that much faith is expressed in the enterprise. Lest he may appear erratic the representative from this state at the conference of Commissioners at Boston, will say that the report as published of said meeting credits him with the words of another, and he is thus made to appear on both sides of the question of the proposed trout law, when in fact he expressed very decided views upon one side only, that was, disapproval on general principles whether it applied to chickens, or trout, or any product not wrong in itself.

*State of Rhode Island in account with Commissioners of Inland Fisheries :*

1891.	DR.	
Dec. 31.	To balance due Commissioners. ....	\$100 90
1892.		
Mar. 14.	“ paid for brook trout eggs, hatching and raising. ....	75 00
Dec. 12.	“ “ printing, stamps and stationery.. . . .	28 65
Dec. 31.	“ “ expenses of Commissioners ... . .	10 13
		<hr/>
		\$214 68
1892.	CR.	
Apr. 11.	By cash from State Treasurer.....	\$160 90
Dec. 31.	“ balance due Commissioners.....	53 78
		<hr/>
		\$214 68

J. M. K. SOUTHWICK,  
HENRY T. ROOT,  
WILLIAM P. MORTON,

*Commissioners of Inland Fisheries.*















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